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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,295	06/29/2004	Takeshi Takezawa	119608	9032
25944	7590	09/13/2006		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320				
EXAMINER MAY, ROBERT J				
ART UNIT 2875				
PAPER NUMBER				

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/500,295	TAKEZAWA, TAKESHI	
	Examiner	Art Unit	
	Robert May	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-17 and 19-82 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 2, 4-6, 10-17, 19-36, 39-49, 52-57, 70-74 and 77-82 is/are allowed.
- 6) ☒ Claim(s) 3, 58-60 and 62-67 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 37, 38, 50, 51, 61, 68, 69, 75-76 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 3 is objected to because it appears on line 11 that "a diameter d1" should be "the diameter d1".

Claims 9,38, 51 63, and 76 are objected to because they recite "the outer surface of the second reflecting mirror being formed so as to diffuse-reflect the light incident from the reflecting surface side." There is not enough description in the specification to allow the examiner to understand how the light is being diffuse-reflected and how the outer surface of the 2nd reflector is diffuse-reflecting the light if the light is entering from the opposite side of the 2nd reflector's outer surface.

Claims 8, 37,50,75,62 is objected to because it is unclear how the incident light is reflected and transmitted from the reflecting side of the second reflecting mirror.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3, 58-59, 63 and 66 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsushita.

Regarding Claim 3, Matsushita discloses in Drawing 1, an illumination system comprising an arc tube 1 with a light emitting portion 1 including two electrodes 2a, 2b arranged on both sides of the light emitting portion, having sealing portions 3a, 3b on both sides of the light emitting portion, with a 1st reflecting mirror 9 arranged on the rear side of the light emitting portion along the longitudinal direction of the arc tube 1, a 2nd reflecting mirror 15 arranged on the front side of the light emitting portion, where the diameter of the 1st reflecting mirror is larger than the outer surface of the 2nd reflecting mirror. The 2nd reflecting mirror is arranged so that light emitted from the center of the light emitting portion and incident on the 2nd reflecting mirror and a normal of the 2nd reflecting mirror agree or correspond with each other. And furthermore, the diameter of the opening end of the 2nd reflector 15 mirror having a size that allows reflection of a boundary light of the light emitted from an end of the arc generating between the electrodes adjacent to the 1st reflecting mirror without interception by the 2nd reflecting mirror.

Regarding Claim 58 there is a lack of definitive structure pertaining to the arc tube that is recited other than the marginal light that is determined by the structure of the arc tube. Matsushita has an arc tube structure that defines the marginal light generated by the light-emitting portion of the arc tube 1.

Regarding Claim 59, Matsushita discloses in Drawing 1, the 2nd reflecting mirror is arranged to an outer periphery of the light-emitting portion with a space there between.

Regarding Claim 63 Matsushita discloses a second reflecting mirror that is capable of diffuse reflecting light.

Regarding Claim 66, Matsushita discloses in Drawing 1, adhesive 16 for affixing the 2nd reflecting mirror to the sealing portion of the arc lamp.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 60,62,64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsushita in view of Strobl. Matsushita fails to disclose the reflecting mirror being formed of a dielectric multilayer that transmits UV and IR Light. Strobl discloses in Figure 6, an arc tube lamp comprising reflector systems (140, 142) that have dielectric multilayer coatings that transmits UV and IR light in order to draw heat away from the light source (Col 41, Lines 6-11; Col 45, Lines 31-34). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the 2nd reflecting surface of Matsushita with a dielectric multilayer of Strobl in order to transmit UV and IR light to cool the Arc Tube lamp.

Regarding Claim 62, Matsushita fails to disclose the outer surface of the 2nd reflecting mirror being formed as to allow light incident from the reflecting surface side to

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transmit. Strobl discloses reflecting systems 140,142 that is formed to reflect visible light on the reflecting side but transmit IR and UV light from the reflecting side (Col 41, Lines 6-11; Col 45, Lines 31-34) in order to cool the arc tube lamp. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the 2nd reflecting surface of Matsushita with a dielectric multilayer of Strobl in order to transmit UV and IR light from the reflecting side to cool the Arc Tube lamp.

Regarding Claim 64, Matsushita fails to disclose the 2nd reflector material being made from any one of quartz, light-transmissive alumina, sapphire, YAG and fluorite. Strobl discloses the dielectric coating of the reflecting systems 140,142 as almost completely comprising an alumina material (Col 45, Lines 27) or the substrate can comprise a quartz substrate which are suitable materials for a radiation transmitting material for use in forming a reflector for drawing heat away from the conductive surface (Col 45, Lines 32-35) in order to provide cooling for the lamp. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the 2nd reflector of Matsushita with the reflector made of quartz or alumina in Strobl because quartz and alumina are well known in the art to be suitable for use as a reflector material in order to transfer heat away from the light emitting element of the arc lamp.

Regarding Claim 65 Matsushita fails to disclose the outer circumference of the light-emitting portion as being coated with an antireflection coating. Strobl discloses in figure 6, an illumination system with an arc tube lamp 72_F in which the circumference of the outer circumference of the light-emitting portion 42 is optionally coated with an anti

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reflection coating so that selected light wavelengths can be transmitted and reflected (IR reflection, and visible anti-reflection) in order to maximize the luminescence of the system (Col 49, Lines 63-67). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the outer circumference of the light emitting portion of Matsushita by applying the coating of Strobl in order to maximize the luminescence of the system.

Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsushita as applied to claim 12 above, and further in view of Ookahara (PG Pub 2003/0184200). Matsushita fails to disclose the cement as comprising a mixture of silica and alumina or aluminum nitride. Ookahara discloses in Figure 2 an adhesive agent 21 comprising a mixture of silica and alumina for securing the arc tube sealing portion to a reflector, which is known in the art to be heat resistant and it won't flow into the reflective surface when temperatures become high (Pg 3, 1st Para 3rd line down). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adhesive of Matsushita with the silica alumina adhesive agent of Ookahara because it is a heat resistant adhesive and it won't flow into the reflective surface when temperatures become high.

Response to Arguments

Applicant's arguments, see Remarks, filed 30 June 2006, with respect to Claims 1 and 2 have been fully considered and are persuasive. The rejection of Claims 1 and 2 including all claims depending therefrom, has been withdrawn.

Applicant's argument with regard to Claim 3 has been fully considered but it is not persuasive. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the same reasons as stated above for Claim 2 satisfying the claimed equation) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Allowable Subject Matter

Claims 1-2, 4-17, 19-50, and 52-57 are allowed.

Claims 61,68-69 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding Claim 2, the prior art does not teach or show a diameter of the at the opening of the first reflecting mirror being within the range that satisfies $\theta_e > \theta_d$ where

$\theta d = 90^\circ + \tan^{-1} \{(Le/2+Lr)/(d2/2)\}$ in combination with the second reflecting mirror on a front side of the light emitting portion.

Regarding Claims 1 and 61, the prior art does not teach or show an illumination system wherein the second reflecting mirror is formed by a pipe having an inside diameter larger than the outside diameter of the sealing portion.

Regarding Claims 68-69, the prior art does not teach or suggest an illumination system wherein the second reflecting mirror is pressure-fixed to a vicinity of the light emitting portion of the arc tube with a spring wound around an outer circumference of a sealing portion with a space therebetween.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert May whose telephone number is (571) 272-5919. The examiner can normally be reached between 9 am– 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300 for all communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval PAIR system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RM

9/6/06



RENEE LUEBKE
PRIMARY EXAMINER